Electricity on the Farm

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A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY

In this issue—

HEATING THE SOIL WITH WIRES

See page 6

10 CASH PRIZES will be awarded for the best titles for the above picture. *(See inside back cover for rules)*

JANUARY
1935

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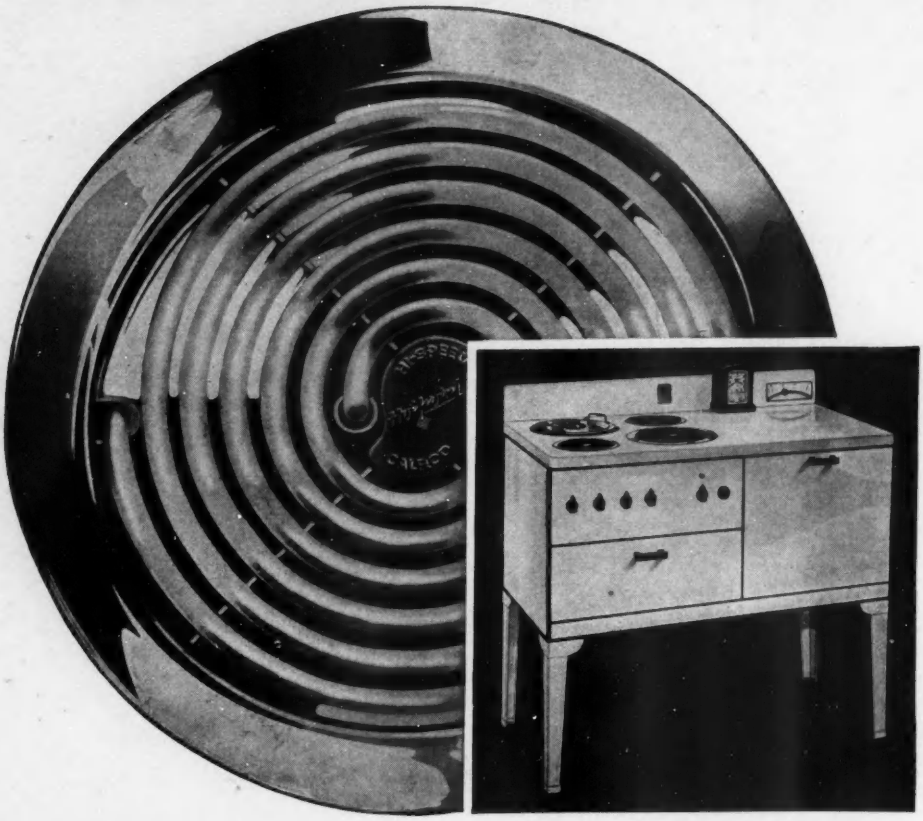

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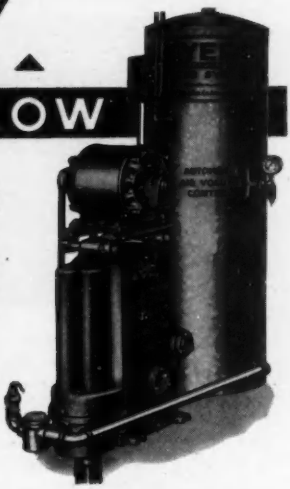

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Vol. 8. No. 1
January, 1935

Electricity on the Farm

IN THIS ISSUE

Heating the Soil with Wires

BY T. E. HIENTON

Higher germination percentages and faster and more uniform growth of plants have resulted in the acceptance of electric heat for hotbed operation, says the author of this article on page 6. Accurate control of amount of heat applied is another advantage over other heat sources. Practical installations are described and experimental data are presented in this article.

Night Life of a Chicken

BY GEORGE W. KABLE

There is no place on the modern poultry farm for the jungle bird—the original tropical hen. Modern poultry houses resemble the great white way of a city at night and have changed the peak of egg production from spring to winter months. On page 9 the author presents some interesting facts on increasing egg production by regulating the night life of the hen.

How Electric Ranges Rank with Men

BY VERA B. MEACHAM

The majority of men are eager to have the kitchens of their homes equipped with conveniences which lessen drudgery. And the electric range plays an important role in such a program. If you want to know what others think of this method of cooking, the author presents the opinions of a few of her acquaintances on page 11 for that purpose.

Regular Monthly Features

Electrical Housekeeping, page 14; On the Air, page 16; Questions and Answers, page 17; What's New, page 18.

EDITORIAL

Controlling Plant Life

LUTHER BURBANK astonished the horticultural world with his spectacular experiments with plants. His work demonstrated that new types could be developed, and the desirable features could be further improved.

In more recent years the accurate control of time of maturity of plants through the aid of electricity has come to the fore. Now flowers, for example, can be blossomed at just the time when the demand for them is greatest.

The latest development of interest and value to florists and farmers is the electrical heating of starting frames and hot beds.

Many plants can be given an early start with the assistance of electrical heat, applied either above or below the ground, and good, sturdy sets thereby produced. The cost with all factors taken into account compares very favorably with earlier used methods. And better results are secured. The future seems bright for this new use for electricity.

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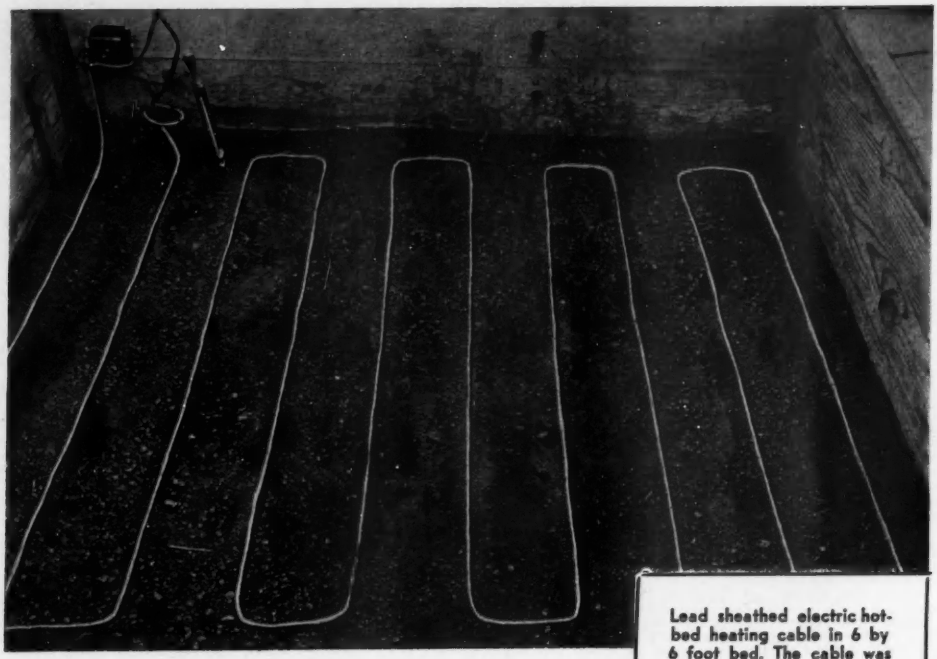


Lead sheathed electric hotbed heating cable in 6 by 6 foot bed. The cable was operated on the surface of the soil as a check against that installed 6 inches deep in an experiment at Purdue University during 1933 and 1934.

HEATING the SOIL with WIRES

By T. E. HIENTON

HOTBEDS, cold frames and propagating benches are now commonly heated electrically while outdoor soil heating still receives experimental attention. Each year sees an increasing use of electric heat to germinate and raise early plants protecting them from frost before they are transplanted. A similar increase for propagating cuttings or growing plants in greenhouses is also occurring. Possibilities of outdoor soil heating for special crops proving economical seem to be nearer success after each year of trial and experiment.

Several hundred thousands of feet of lead-covered heating wire are now in use throughout the United States in hotbeds and cold frames. Higher germination percentages and faster, more uniform growing of plants have been partly responsible for this acceptance of electric heat. The ease with which temperatures of soil and air may be controlled with electric heaters is another feature unequaled by other sources of heat. Vegetables, as well as flower plants of all kinds, ordinarily grown in hotbeds, and others grown with more difficulty are now being grown by use of electric heat in the hotbed.

Electric heating cable is being used to a limited extent for frost protection in cold frames, a very practical development in many areas. This is especially practical for many gardeners and growers, since it aids in reducing the investment required in providing glass sash for all plant beds. By using electric cable on the surface of the soil or sides of the bed frame for frost protection, canvas or muslin-covered frames may be the only sash required.

Propagating benches are being heated in many sections of the country by heating cable especially during summer months when boilers are not fired for heating the greenhouses. Cuttings root faster and in greater quantity where electric heaters provide an even temperature. Many installations have been made particularly to root poinsettia cuttings

during the summer. However, many other cuttings such as rose, evergreen and coleus are being grown in electrically heated propagating benches. These are used during the spring for starting dahlia roots or for growing plants as shown in the picture taken at the Lanternier greenhouses in Fort Wayne, Indiana.

Heating outdoor soil plots is at the present time largely in the experimental stage. Favorable results have been shown by the use of artificial heat to supplement that of the sun but the economy of the practice has yet to be demonstrated. The use of such heating will very probably be limited to out-of-season crops for which a higher price may be secured.

Advantage of Soil Heating Proven

Early northern-grown celery may command a higher price for a short time in June since there is very little available from other locations. This fact led George A. Sweet, a past president of the National Vegetable Growers Assocation of Fort Wayne, Indiana, to experiment with the use of electric soil-heating cable to produce very early celery. During the 1933 season, one of low prices, a maximum increase of 56.6 per cent was obtained from one row more than the check row. During the 1934 season when celery prices were much higher, a very warm May practically eliminated the early advantage the heated rows had gained over the unheated which is shown in the accompanying picture. The 1934 prices for celery would have returned more than the cost of operation for the increases obtained during 1933, but the weather conditions during 1934 more than offset the rise in price and possible gain.

The recommendations for lateral spacing of hotbed cable in hotbeds range from 6 to 18 inches. Recommendations for the depth of installing the cable vary from surface installation to 6 inches. As a result of these wide variations in recommendations, a study of the subject was undertaken in March, 1933, by G. W. Alkire of the agricultural engineering staff of the Indiana agricultural experiment station at Purdue University.

Spacing of Cable Studied

The study consisted of seven different installations of No. 19 hotbed cable, each with its own thermostat and 60 feet of cable. In the comparison of lateral spacing of cable, four distances were used between adjacent lines, 7, 10, 14 and 18 inches respectively, all of which were located 6 inches below the surface of the soil. Three depths were used: surface, 3 inches below surface and 6 inches below surface, all with 7-inch lateral spacing. During 1933 and again in 1934 a crop of cabbage plants was started, removed and followed by tomatoes.

As a result of this work Mr. Alkire has reached the following conclusions:

1. Electric hotbed heating cable installed with a lateral spacing of 14 or 18 inches, at a depth of 6 inches below the surface of the soil, will not maintain a soil temperature of 60 degrees F. when the outside night temperature descends to 30 to 34 degrees F. with 1-inch frames and no insulation. With a spacing of this width and depth it is advisable to use some means of heating the air in the hotbed or some form of insulation if the outside temperature drops below the freezing point.

2. The air temperature of hotbeds heated with electric hotbed heating cable installed with a lateral spacing of 7 to 18 inches, and at a depth of 6 inches below the surface of the soil, is from 6 to 18 degrees F. lower than the air temperature of beds heated by the cable placed on the surface of the

Electrically heated row of celery (left) and check row (right) at Sweets celery farm, Ft. Wayne, Ind., in May, 1934. A lead-sheathed hotbed cable was laid beneath the heated row.

Above: Sweet potato plants in electrically heated hotbed near Muncie, Ind. Hotbed heating cable was used in the soil beneath the plants and also in the air for frost protection.

Below: Sweet potato plants grown in electrically heated propagating bench in Lanternier greenhouses, Ft. Wayne, Ind., during May 1934. The bed was used during the summers of 1933 and 1934 for the rooting of poinsettia cuttings.

soil, or in both the soil and air, or at a depth of 3 inches in the soil, when the outside temperature is from 30 to 34 degrees F.

3. The kilowatt-hour consumption of electrically heated hotbeds is more dependent upon variations in air temperature, in the beds, than on soil temperature. The kilowatt-hour consumption increases as the air temperature increases.

4. Insulation of sides of frame, and mats placed on the sash at night would considerably reduce the energy consumption of beds heated by cable placed on the surface of the soil or in both the soil and air.

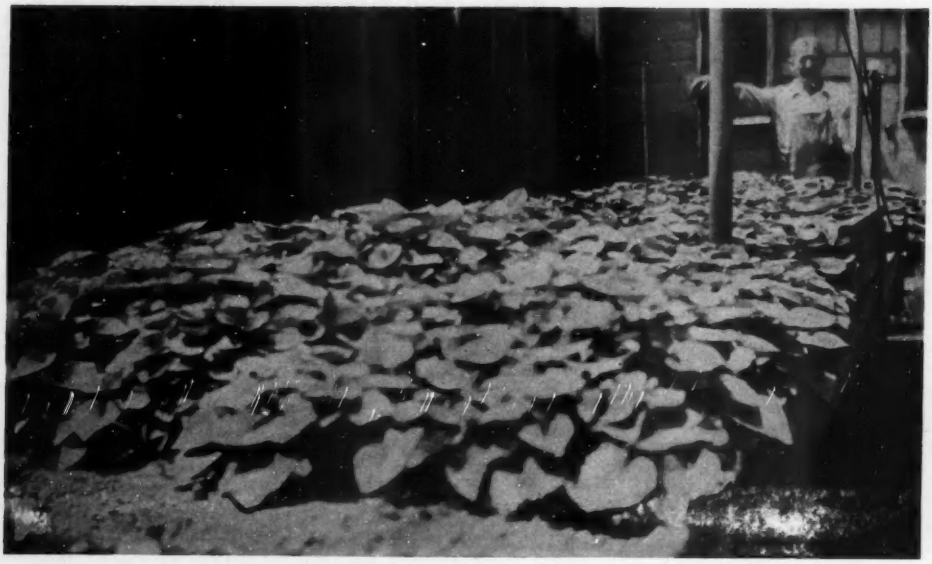
5. Cabbage and tomato plants will germinate in less time, and grow faster, in beds with the cable installed on the surface of the soil, or both soil and air, or at a depth of 3 inches below the surface of the soil than in beds with all of the cable placed 6 inches below the surface of the soil.

6. The kilowatt-hour consumption per sash per day increases as the depth in the soil of the cable decreases, with the same lateral spacing of cable and no insulation beneath or around the bed.

7. In considering the lateral spacing and depth in the soil of hotbed heating cable to be used, the following items should be considered:

a. The difference in operating temperatures desired and the outside temperature.
b. The condition of the frames and the kind of sash used.
c. The method of insulation used, if any, to reduce heat loss.
d. The relative importance of cost of producing plants, and the time required.

It is apparent from the results of these experiments that many factors are involved in the determination of lateral spacing and depth for installing hotbed cable. Depth of frame in the soil, kind and amount of insulation, if any, beneath and around the hotbed, kind of sash used and cover over the hotbed at night, all must be considered. For this reason the author recommends that persons installing such equipment consult qualified sources of information before making their installations.



NIGHT LIFE of a CHICKEN

Bright Lights and All-Night Parties Bring Winter Eggs

By GEORGE W. KABLE

Interior view of the laying house on the Charles Hines' farm, Olney, Maryland. Note the lights with flat cone reflectors directly over the feed hoppers. At the end of each section of the house there is also a convenience outlet for attaching a water warmer during freezing weather.

THE hen is a tropical bird with a natural inclination to roost in the trees and to lay some forty eggs per year when the food, light and sex appeal is just right; and then sit and set and cackle the remainder of the time. If one of those "forty egger" jungle birds strutted onto a modern poultry farm today, she'd be as much out of place as grandpap imbibing coffee out of a saucer through his mustache at an afternoon bridge party at the Waldorf. It isn't done that way any more. Those old easy-going cacklers have been written off the inventory. They have been evoluted from forty to three hundred eggs per year, and from 15 ounces up to 24 ounces per dozen.

Now, of course, if any of you readers are devotees of the jungle hen, you might better read the almanac, for the remainder of this article gives the technique of modern night life in a hen house; and jungle hens just can't stand the pace.

It is unconcealed barnyard gossip that the chickens have their families in the springtime. The bugs and worms and green stuff are more plentiful then, and there are more hours of light to harvest the crop. If the eggs are regularly removed from the nest, the family urge remains, and the hens continue to lay until they give up in disgust and fatigue, throw away their chick covering feathers and moult.

The result of this natural egg laying cycle is that there are lots of eggs on the market from March to May, and fewer fresh eggs from September to February. We may think the hens are giving us a tough break to lay eggs when the price is low and hold back when the price is high. But it isn't the hens. They are doing their stuff in the normal way. It's man's perversity in insisting on being abnormal and being willing to pay for it. The question then is how to make the hen abnormal so she will lay her eggs on the high point of the price curve instead of in the hollow of the spring dip. The answer is: Bright lights and more night life in the wintertime.

It is common knowledge among poultrymen that lighting hens in the fall and winter months does stimulate production. The effect is not so much to increase the total annual egg production as to shift the period of high production from spring to fall and winter.

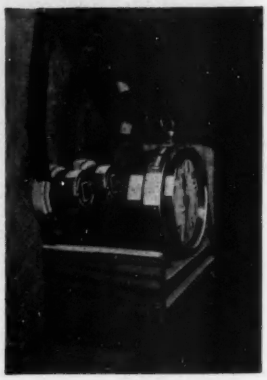
Good Laying Stock Also Required

Lights alone will not produce eggs. One should have stock with egg laying ability. The hens or pullets must be in good physical condition to stand the strain of heavy production. Then the feed should be such as the hens need in the manufacture of eggs; high protein, appetizing feeds to take the place of the bugs, the worms, and green feeds which have been mentioned as the normal accompaniment of spring laying. These factors are essential. Light is the catalytic agent which enables the hens to turn the food into eggs during a period when they would not do so without artificial light.

The question probably arises in your mind at once about the effect of light on immature pullets, moulting hens, and that mixed flock of poor layers that have not been earning their feed.

Fall and winter lighting seems to stimulate the body process of all birds. Immature pullets develop faster and come into laying sooner. Early moulting hens are speeded on to recovery by lighting and proper feeding. Late moulting hens may be kept from moulting during the high price period in September and October. Yes, and that flock

of poor layers will deliver more eggs under lights. But—"The highest producing fowls invariably yielded the greatest profit from lighting." (Oregon



An alarm clock may be used as a time switch, but the legs of the clock must be accurately placed in depression in the wood platform. Commercial time switches for this purpose may now be purchased reasonably and make a more durable and permanent installation.

State College Bulletin 231). A flock of layers under lights is something like a bank roll at interest. With 100 hens worth $150 as layers, and another hundred having only a meat value of about $50, the extra eggs or "interest" from lighting will be about three times as much from the good hens as from the poor ones. Where one must choose between lighting good hens or poor ones, he had better light the healthy, high producing strain, and use the "jungle birds" for trading stock or visits from the district preacher.

There has also been much discusison of the advisability of using lights on breeders. Several years ago I examined the reports of investigations conducted by most of the experiment stations in the country. Opinions varied, but the facts indicated that fowls which were on the up-grade in production had the best record for hatching eggs. If they were in poor physical condition or had been forced either by lighting or feeding, and were slumping in production, the hatchability was poor. The proper way to light breeders is to first have them in good physical condition and body weight, then turn on the lights about a week before one wishes to start saving hatching eggs.

Hens Respond Rapidly to Lighting

The response of hens to artificial lighting is almost immediate. Production may be expected to start increasing within a week and reach a maximum in three weeks to a month. It is not necessary to start lighting gradually, but when discontinuing, the lights should be tapered off or the birds may be thrown into a moult.

The time of year to turn on the lights depends on what one wishes to accomplish with them. If late pullets are to be hastened into maturity, September lights may be desirable along with a growing mash. Late moulting yearling hens being kept for eggs, or January hatched pullets, may also need lights in September to prevent or stop a fall moult. If hens are to be used as breeders, it is best to give them their rest period and a chance to gain weight before bringing them into production with lights in November to January. Good normal pullets and early moulting hens kept for egg production should be lighted about October 1.

The time during the night to light the laying house is a moot question. Some experiment station poultrymen who talk chicken language have attempted to ask the hens. Professors Kennard and Chamberlain say the Ohio hens want light all night and have said so both in eggs and pounds. (Bulletin 476, Ohio Agricultural Experiment Station). In other words, all-night lighting has produced more winter eggs and kept up the body weight of the hens better than morning lights. Prior to the speaking of the Ohio hens, there was quite a squabble over evening lights, morning lights, nine o'clock lunches, night shift dinners, and various combinations of these. Perhaps more poultrymen use morning lights than any other system because a simple time switch or Big Ben clock will turn on the lights in the wee hours, and Nature dims them with the dawn. Evening lights and night lunches call for a dimming device to tell the hens when to go to bed, and give them time for a last bite before hopping the roost. Any of the systems advocated bring increased production, and comparative tests are not adequate as yet to settle the question to the last egg. Prof. Kennard says that all-night lights are especially effective in getting winter production from hens and for stimulating more rapid maturity of backward or inferior pullets. First class pullets do not need this extra stimulus, and morning lights seem generally sufficient. All-night lights have the advantage of simplicity in requiring neither time switch nor dimming device; and those who have used them are staunch advocates.

How to Install Lights

Lights should be installed to throw the maximum illumination on the feed hoppers. Avoid dark corners on the feeding floor if possible, and be sure the light shines on the roosts so the hens are aware of the light. The placing of the lamps depends upon the size and construction of the house. In houses 24 feet wide or less, the lamps may be placed half way between the roosts and the front of the house and about 10 feet apart. Let them hang from the ceiling or attach them to the cross braces. They should be 6½ to 7 feet from the floor in order to get the most light and still be out of the way. Cone shaped or RLM dome reflectors will increase the intensity of light on the floor over the use of bare lamps. Reflectors should be white enameled or aluminum painted inside. Lamp units should be wiped clean occasionally if you intend for the hens to have the light instead of throwing it to the dirt. Dirt may cut off forty per cent of the light from a lamp. Place the control switch in the feed room or where convenient for snapping on and off or setting the clock.

If lights are used all night, the Ohio Station recommends 10 to 15 watt lamps. These produce a dim light, but strong enough to permit the hen to eat or sleep, as she chooses. For shorter periods of lighting, the Cornell Experiment Station advocates 40 watt lamps. Either system uses about the same amount of electricity, which is less than 1 kwh. per lamp per week; and one lamp will light 100 hens or more.

Uses of electricity which produce a good profit over their cost will help to pay for power line extensions, and for the operation of the radio, refrigerator and dishwasher. Hen house lighting is one of these uses. It is simple, easy to install, is proved by long experience on the farm, and it brightens up both the hen house and the pocket book.

HOW ELECTRIC RANGES RANK WITH MEN

You do not have to split up a pile of kilowatts everyday for an electric range.

It used to keep a man busy just hauling in wood.

We men have other things to do than fill wood boxes.

By VERA B. MEACHAM

THERE is a man down in southern Indiana who holds the local championship for plain and fancy grumbling. If he ever did say anything kindly or pleasant about anyone or anything, that remark has been forgotten. Local history does not record it.

One day a more than usually venturesome and successful salesman sold him an electric range. His friends waited expectantly for him to burst forth about this new fangled idea of cooking with electricity. Weeks passed and he never spoke of it. Finally their curiosity got the better of them. One day when a group was standing about watching the local garage man tinker with an engine, Tim Sanders, a neighbor of his, broached the subject.

"Hear there's a new 'lectric range up to your place, Jim."

"Uhuh," grunted Jim.

"Had it several weeks now, ain't you?"

"Uhuh."

"Well, what do you think of electric cooking by this time?" urged Jim.

Jim scowled at the speaker and got up and lounged toward the door.

"Aw, I dunno," he growled, "that range makes everything taste so much better."

That seems not unnaturally to be the first thing that strikes the man of the house about electric cooking. And why shouldn't it be? While we have been learning to cook with even, measured, controlled heat, many of us have learned for the first time how to cook vegetables without draining away their juices and flavors, how to cook roasts with the juices and flavor left in, and how to bake with assured success.

The results the newest cook can get on an electric range impressed the neighbors after Ned Barker married the teacher at Leed's Corners two years ago last June. Everyone knew she had never kept house. She was a sweet little thing, pretty and friendly, a good teacher, too, but when

Electric cooking is one more step in making the world safe for those we love.

she went into the kitchen, surrounded herself with cookbooks and started in to get a meal, the results were deplorable.

The fire went out and soggy potatoes and half raw meat provided the main part of the dinner,—or pricked by the memory of that failure, she kept a roaring fire and forgot to take out the biscuits until they were brown and hard, and left the steak till it was cooked to a cinder.

Apparently she could not learn to cook.

Then her father-in-law gave them an electric range for Christmas. Cooking with a fire that stayed where she wanted it was another matter. Cooking by charts from recipes that told her plainly how hot the oven should be and how long her cakes should stay in at that temperature was something she could understand and do.

Overnight she became a cook, gradually an excellent cook. When I stopped in to chat with them a month or so ago, her husband bragged joyously about her skill.

"That girl's a born cook," he said. "You should taste her pies, and angel food! Why her cakes are nine inches high, and as light as air,—no foolin'. And she taught herself. Never had a day's experience keeping house till we were married."

Electric Ranges Simplify Cooking

His wife always looks abashed and uneasy when he starts praising her like this,—and his father who was leaning against the jamb of the dining room door, looked at me with a merry twinkle in his eyes. When his son stopped for breath, he took his pipe out of his mouth and waved toward the stove.

"That's what done it," he said. "I dunno why, but seems anyone can cook on one of those stoves. Gladys' a smart girl, and a nice one. She can set up as tasty a meal of victuals as that boy's mother ever did,—and that's praise, Mrs. Meachman, but as fer learning to cook. Twas the range that done it, somehow."

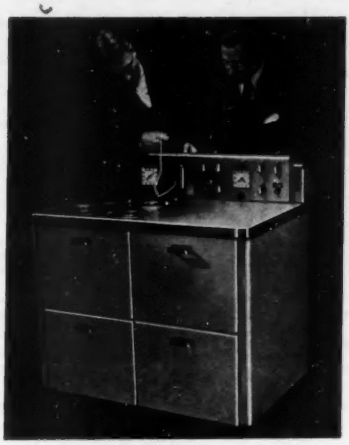
Then there is the man who thinks his electric range is the best stove in the world because it will broil steaks, and broiled steaks, according to him, are far and away the best stuffing for hungry men. His wife had never broiled on their old cook stove, and he had never tasted a juicy, sizzling, fragrant steak, dribbling with butter, and sprinkled with salt and pepper, until he began travelling about with a cousin of his, a cattle buyer in northern Minnesota.

After his first introduction to it, broiled steak became his favorite dinner at the places where they rested and ate after a long day's driving. And always, when he got home, he pestered his wife to learn to cook steak like that. When they got an electric range, she did. So far as he is concerned electric cooking means broiled steaks,

Even in Hollywood men are keeping up with these things. Did you ever realize that Harry Langdon was a cook? Perhaps Mr. Dull doubts it.

broiled chops, broiled hamburger, and because it does, it is the finest cooking in the land.

But there are other roads to a man's heart that



Looking it over.

do not lead through his stomach. Men like electricity for cooking, too, because of its safety.

One day I sat in the kitchen out on a small farm near Fond du Lac, Wisconsin, asking Mrs. Anton Muellenback about her range. The twins, between two and three years old then, played about on the floor at our feet.

Mrs. Muellenback was just finishing the dinner dishes and she waved her dish towel toward the range and told me,

"You'd never believe me, maybe, but I never saw an electric range till he brought that very one right into my kitchen. He said he wasn't going to have any stove around that the children could pull over on themselves, and he wasn' going to have any danger of fire either. He says his is the safest stove he knows. I guess probably it is. And anyhow, it's grand to cook on," she ended with a smile.

Another man in our neighborhood hurried out and bought an electric range when he found that his little grandson was coming to live with them.

"We can't have any matches around in sight, and we don't want an open flame, and we don't want a hot stove within reach of his litle arms," he said. "I guess an electric range is the safest thing for us to use with a child around."

Does Not Overheat the Kitchen

There are still other things men notice about electric cooking.

One farmer on a big Iowa farm says that he always feels more rested now when he comes in from work at noon or night and sits down in a kitchen cooled by a whirring fan to eat a hot, hearty dinner within ten feet of the stove that cooked it, but no longer feeling that he is eating in the oven itself.

"You can't really say the kitchen is cool in August," he admits, "but our kitchen is a sight cooler with that electric range than it used to be with an old cook stove. If we feel the difference just being in the house an hour, the wife must feel it a lot more getting meals on it all summer long.

"Yes. I like electric cooking because it is cool."

Harry Riefsteck, a farmer in central Illinois, considers the simplicity of cooking with electricity one of its greatest advantages. His wife wrote me sometime ago:

"My husband is just as enthusiastic about the electric range as I am. Right now, more so than ever, because I have just spent some time in the hospital recently, and he had a chance to try all our electric equipment for himself. He found it mighty nice to turn on a burner, fry an egg and percolate a cup of coffee while he is listening to the radio. One morning just as he sat down to breakfast, he discovered that there was no butter. That didn't upset him at all. He put some cream in the bowl of my electric mixer and churned a dab of butter while he was eating his cereal.

"Even dishwashing had no terrors for him as it has for most men," she went on. "He just put the soiled dishes in the dishwasher after each meal, keeping this up until it was full; then he washed them all at once."

And so far we have said nothing at all about the crowds of men and boys who look upon electric cooking with vast approval because there is no wood to chop, no chunks to split, no wood boxes to fill, no ash pans to empty, and on fires to build.

There is lots of time saved there.

A man down in Indiana tells the story of a day when having an electric range (and a versatile wife) in his kitchen pulled him out of a tight place. Just at harvest time they lost some of their extra help. The corn had to be cut. So his

(*Continued on page* 18)

RUNNING WATER
YOUR FAMILY DESERVES IT

NOW

is the time to Install a

CID Water System

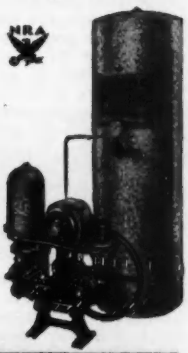
financed by FHA

NRA

The Federal Housing Act enables home owners to enjoy the advantages of running water. Plenty of water for bathing, indoor toilets, laundry, dish washing. No more frozen pumps.

CID Water Systems are simple, trouble-free. Easiest to service. Electric driven. Fully automatic. Low operating cost. And now CID prices are the lowest in history! Model shown pumps 250 gallons per hour—now only $67.00. Other models, shallow and deep well, $49.85 up.

But see your CID dealer at once. Or write us now for free book describing all CID models.



GOULDS PUMPS, Inc.
Seneca Falls, N. Y.

GOULDS

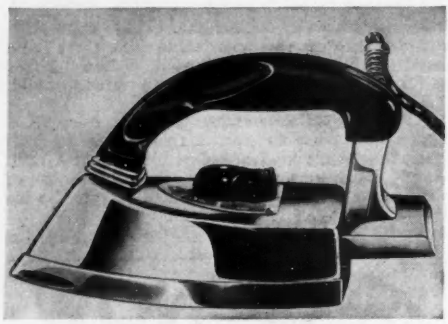
ELECTRICAL HOUSEKEEPING

Conducted by
GAIL MEREDITH

WEIGHT AND WATTAGE

IF you are going to spend some of your Christmas money for a new iron, you will find interesting shopping ahead of you.

I hope you will remind yourself before you sally forth that beauty is only skin deep with irons, and



A New Streamlined Model

that your satisfaction and their service depends on the quality that is built into the inside of the iron. You can only be sure of this quality by the reputation of the firm that makes the irons; the guarantee on them, in other words, is just as good as the name on their nameplate.

The new ones look different to begin with. On some of them the handles are brushed back in a streamlined pompadour that gives them a faint resemblance to the engine of the Burlington Zephyr. On another model that is attracting attention there is no front bracket on the handle at all. I have not used this iron, but women who have say that this open handle is a great advantage when you are ironing frills and ruffles.

The weight of your iron is something else to consider. If you like the light ones, three and a half and four pound irons are made for you by good manufacturers. Or the same firms will supply you with the six pound iron if you prefer that.

If you have never tried ironing with a light iron, I hope you will do it while you are shopping. You may be surprised how easy they are on your arms, and how effective on your clothes. They are the same size and they look the same, but they weigh about half as much as other irons.

Wattage is even more important than weight in the iron you choose. That really should not be looked on as a mere matter of personal preference anymore. Enough work has been done in various laboratories that test household equipment on household jobs to justify the assertion that at least 800 watts is necessary in your iron if you expect to keep it hot while you are ironing heavy damp things. I like 1000 watts even better. That gives any ironing heat you want almost instantly. Which brings us last of all to the feature of first importance in modern irons, automatic temperature control.

Nowadays all the best irons have this control built in. It is a safety feature, first of all. Safety for the materials you are ironing, safety for the iron, and even safety from fire for your house itself.

A built-in temperature control does not forget to turn off the current.

In the models pictured on this page a scale on the top of the iron is marked off in sections designated *Off, Cotton, Linen, Silk, Wool.* When you turn the knob to a certain section on this dial, the one marked wool, for instance, the iron heats to just the right temperature for ironing wool. When you come to the tablecloths, you turn the pointer to linen, and for ironing silks, you move it again.

When you turn the pointer to *Off*, that cuts off the electricity and you do not have to pull out the plug nor disconnect the cord from the outlet. You cannot overheat your iron with this control in action. You need not scorch silks or wools if you watch the setting, and you can have all the heat you need for any ironing.

Learn to Regulate Your Iron

I met a young woman last summer who had been given a really excellent iron for Christmas, but she complained to me that she just could not use it. It would not heat up like her old iron.

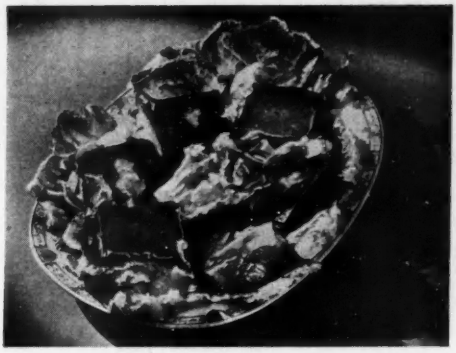
I looked at it and found that the knob was set on Low,—her dial was marked Low, Medium, and High,—and she was trying to iron a very damp three yard tablecloth. I changed the setting and pointed this out to her. She tried it a minute, saw at once the results of the extra heat in the iron and fairly beamed with pleasure.

"I never knew what that little knob was for," she said. "I hadn't noticed what it said there."

She had been trying to iron for months with less than half the capacity of her iron.

The convenience as well as the safety of this control makes it seem indispensable when you once grow accustomed to it. I hope the iron you buy has a good one.

The automatic temperature control is a safety device.



PRUNE ORANGE SALAD

HAPPILY for us some one is always thinking up new and appetizing ways of using familiar foods. Take this prune orange salad, for instance. Had you ever thought of putting these two together just this way? And then tucking in a little cottage cheese just for good measure? Doesn't it sound and look delicious?

¼ cup cold water
1 envelope gelatine
1/3 cup sugar
½ teaspoon salt
1 cup hot water
½ cup orange juice
2 tablespoons lemon juice
6 slices of orange free of membrane
6 cooked prunes
½ pound cottage or cream cheese

Sprinkle the gelatine in the quarter cup of cold water. Add sugar, salt, and the cup of hot water. Stir until dissolved, then add the orange and lemon juice.

Profitable Water

Some farmers in the drought regions who were able to improvise irrigation systems last summer reaped handsome profits. John C. Dunegan, of the Bureau of Plant Industry, reports the experience of a fruit grower who irrigated 827 eight-year-old peach trees in an orchard at Springdale, Ark. He applied approximately 1,000,000 gallons of water during the drought at a cost of $240. He marketed about 3,000 bushels of peaches from the trees, and the fruit was of so much better size and quality than the peaches from unirrigated trees that his price was about 50 cents a bushel more than his neighbors were able to get.

Thus the $240 expenditure for water was responsible for a $1,500 increase in income for quality, not counting the increase in the number of bushels he harvested as the result of irrigation.

Bright Day Ahead for Good Producers

"THERE is a bright day ahead for the dairy breeder who can maintain a small herd of excellent cows through these difficult times," says H. R. Lascelles, who has charge of the Colorado Agricultural College dairy herd.

"With feed prices advancing, and assuming butterfat prices to average 35 cents per pound in whole milk, it is going to take a cow that produces 300 pounds of butterfat per year to pay for her feed and overhead this winter, he adds. "In sections where sour cream is sold at a lower price, it will take a good cow indeed to pay her way.

"If a cow is not worth feeding a little grain she is not worth keeping around the place. A tremendous saving can be effected by limiting the grain ration to about 1 pound of grain to every 4 pounds of milk produced.

"Many commercial herds are feeding far too much grain to cows that are 'strippers,' neglecting the fresh cow and dry cow that should be put in condition to milk. Other herds are being fed little or no grain."

A cow must do more than produce a return above feed cost, he emphasizes, since feed cost constitutes about three-fifths of the total cost, which includes taxes, upkeep, equipment, labor and other items.

He suggests that dairymen who wish to keep out of the red this winter test every cow and get rid of unprofitable and diseased cows quickly, use the services of veterinarians when necessary, save feed and milk by disposing of bull calves at birth unless they are to be saved for breeding purposes, feed suitable grain to profitable cows, keep breeding records, keep the herd sire in good condition, and consistently breed the herd to a higher production standard.

RUNNING WATER

$43.75

A complete shallow well system may be obtained for as little as $43.75. We can tell you what it will cost if you will give depth of your well and approximately how many gallons of water you require daily.

Why continue to endure the discomforts of carrying water when you can have all of the advantages of running water? You can obtain the necessary money through a bank near you with the aid of the Federal Housing Administration, for this or other improvements to your home. Why not make up your mind to write us today for complete information?

The Uniflow Manufacturing Co.
ERIE, PA. DEPT. E.

GUARANTEED

UNIFLOW

"THE PUMP SUPREME"

CHROMALOX
SUPER-SPEED ELECTRIC RANGE UNITS

NEW LIFE for your old range

These new, modern units will make your old range cook FASTER, will cut electric bills—and will last indefinitely. Shock-proof—all wiring is covered. Easy to clean. Ask your power company about the free trial offer, or write us.

Edwin L. Wiegand Co., 7580 Thomas Blvd., Pittsburgh, Pa.

ASK YOUR POWER COMPANY for a FREE TRIAL

ON THE AIR

Conducted by James J. Haney

Columbia Presenting Array of Programs

AMONG the old favorites that are again being heard on Columbia stations this winter are the Easy Aces and the Voice of Experience. If you like dramatizations of news events, the March of Time rates at the top. Bing Crosby and Burns and Allen are back on the air over Columbia stations, and so are Dick Powell, Ted Fiorito, Gertrude Niesen, and Whispering Jack Smith.

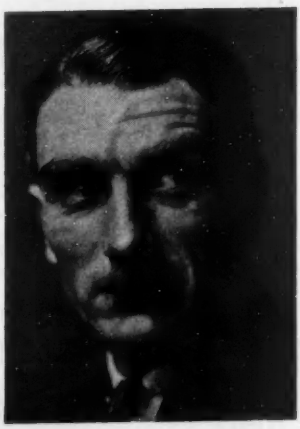
Roxy is back with a new series of programs. In his new program with a new cast which he has built, Roxy features dialogue and music and sound effects.

Over NBC stations you can hear again Ed Wynn and Warden Lawes of Sing Sing. Of course Amos 'n' Andy are still holding forth with their amusing episodes.

• • •

News Commentator Once on Paper

IN the winter months those of us who know or live on the farm appreciate radio even more than at other times of the year. Long evenings are available for any type of listening that we may prefer; in fact the evenings are long enough to give everyone in the family a turn at choosing his own program. For if Dad likes a good quartet and sister likes drama, while son wants a dance band, it isn't at all difficult to begin a little controversy.



Boake Carter, favorite news broadcaster, who summarizes the news five evenings each week, Monday to Friday, over CBS stations.

However, there is one type of program that seldom finds a member of the farm family anxious to "tune out." That's the type of program that pleases our hunger for news and opinion on the latest developments.

This winter an unusually splendid group of news broadcasters is on the air. Of these, Boake Carter continues to reign as one of the favorites. You may hear him over stations of the Columbia Broadcasting System. Boake Carter used to be a newspaper man, corresponding for the London, England, *Daily Mail*, and later writing for a Philadelphia newspaper. His talks originate in the Philadelphia studios of WCAU, the CBS station there.

Then there's Edwin C. Hill, another extremely interesting speaker, who delves into the most important developments of the day. Frequent news broadcasts are featured by stations operated in connection with newspapers, and regularly scheduled periods are featured by the press in cooperation with radio broadcasters.

With the help of these facilities it is indeed true today that farm families may be as well informed as those in the city.

• • •

Merry Minstrel Show Goes on Air

ALL the color and gusto of an old time minstrel show, with plenty of jokes and songs is now being heard every Monday, Thursday, and Friday evening in a new series of program over NBC stations. Al Bernard, the boy from Dixie, and Paul Dumont, announcer and radio writer, are starred as endmen.

Participating in each broadcast are the Melodeers, and on the Friday programs songs by Mario Cozzi, operatic and concert baritone, are featured.

Both Bernard and Dumont are well known among radio listeners. Bernard is one of the outstanding stars of minstrel entertainment, and Paul Dumont has been associated with scores of radio offerings.

• • •

Bing Crosby Realizes Ambitions

JUST a few years ago when Bing Crosby came East to earn fame with his voice he was asked the time worn question, "What would you do if you had a million dollars?"

Bing, believing such a thing to be quite impossible, gave an answer anyway. He'd build a home in California, buy a boat, an automobile, and take up golf and fishing, among other things.

Within a short span of time he has accomplished all of these things.

Born at Tacoma, Washington, Crosby always wanted to be an actor. His nickname was inspired because he, as a boy always imitated the "bing" "bing" of a rifle as he enacted "Custer's Last Stand" in the public park. His parents encouraged his talents, but his attraction for the stage became a problem when he played hookey from school to be the property boy for Al Jolson in Spokane.

KFI, Los Angeles, was the first radio station to carry Crosby's voice. A subsequent theatre tour led him to an engagement with Paul Whiteman. When the CBS network offered Bing a spot on the radio chain, it was just a short time before the feature became a leading program.

Bing is 30 years old and celebrates his birthday on May 2. He has written lyrics for several popular songs including "Blue of the Night." He is married and has three sons including twins born in August this year.

Questions and Answers

Question: *A 16-inch pulley on a pump jack makes eleven complete revolutions to one complete stroke of the jack arms. What size pulley would be required on a 1725 R.P.M. motor to operate the pump at forty strokes per minute?*

W. B. B.

Answer: When the jack operates forty strokes per minute the shaft of the 16-inch pulley operates eleven times faster, or 440 R.P.M. The R.P.M. of the driven shaft (440) multiplied by the diameter of the pulley in inches (16) equals the R.P.M. of the motor (1725) multiplied by the diameter of the motor pulley (x) in inches or

$440 \times 16 = 1725\ x$

$1725\ x = 7040$

$x = 4$ inches as diameter for motor pulley.

Question: *There is a 2300 volt high line in front of our house. Which is the most desirable installation, a two or a three-wire connection to the transformer?*

We have an electric refrigerator, range, pump, washing machine and iron.

E. W. Symns,
Cherokee, Oklahoma

Answer: A two-wire service is seldom satisfactory except where the customer limits the use of electricity to only lighting and appliances. A three-wire service costs but little more than a two-wire service and is the correct type of installation for farm use.

On three-wire service the lighting and household appliances can be operated on 110 volts and the power equipment on 220 volts.

To operate the standard type electric range, it is necessary to have three-wire service.

Question: *Do you know of any practical and economical method of heating water for stock with electricity? The tank is 2½ ft. x 4 ft. x 10 ft. and is located in the barnyard. The lowest step of the electric rate is 4 cents per kilowatt hour.*

H. P.

Answer: Each year as winter approaches the

ICE or EGGS?

Hens must drink if they are to lay.
Small Device Does Big Job at Little Cost
Are your drinking pans protected with the

TRUMBULL Automatic ELECTRIC Water Warmer

At your dealer's, or send $3.00, and we will mail you Water Warmer postpaid. ELECTRIC BROODERS—"All-Weather" Colony type for 350 chicks; "Economy" low-priced unit for 100 chicks. Accurate, automatic and safe.

Write for descriptive Folders and Prices
THE TRUMBULL ELECTRIC MFG. CO.
1012 Woodford Avenue Plainville, Conn.
A GENERAL ELECTRIC ORGANIZATION

Practical Applications!

All appliances on the list below have been proved economically practical for farm service on thousands of farms in all sections of the country.

How many of them are you using? Why not get the facts on any that would help you with your hardest chores?

Study the advertising pages—or use the handy coupon below!

FOR THE HOUSEHOLD

Ranges (*see advt., inside front cover*)—Refrigerators (*see advt., page 15*) — Clothes Washers — Vacuum Cleaners—Ironing Machines—Dishwashers—Flat Irons —Food Preparing Machines—Ice Cream Freezers—Sewing Machines — Table Cooking Appliances — Clocks—Range Replacement Units (*see advt., inside front cover and page 15*)—Floor Polishers.

FOR WATER SUPPLY

Automatic Water Systems (*see advt., pages 3, 13 and 15*)—Water Heaters (*see advt., inside front cover and page 15*)—Controls.

FOR THE DAIRY

Milking Machines—Milk Coolers (*see advt., page 15*) —Cream Separators—Churns—Bottle Washers—Dairy Sterilizers — Clipping and Grooming Machines.

FOR POULTRY

Incubators — Brooders (*see advt., page 17*) — Time Switches — Drinking Fountain Warmers (*see advt., page 17*) — Ultraviolet Light — Thermostats.

FOR REPAIR AND MAINTENANCE

Soldering Irons—Tool Grinders—Drills—Paint Sprayers —Woodworking Machinery—Motors.

MISCELLANEOUS

Feed Grinders—Ensilage Cutters—Corn Shellers—Hay Hoists — Feed Mixers — Stationary Spray Plants (*see advt., page 3*) — Burglar Alarms — Ventilators — Soil Heating Equipment (*see advt., page 4*)—Insect Traps and Screens — Electric Fencing — Radio Sets — Sheep Shearing — Light for Stimulating Plant Growth (*see advt., page 4*)—Floodlights (*see advt., page 4*)—Septic Tanks (*see advt., page 15*)—Bunch Tyer—Vegetable Washer—Motors (*see advt., page 4*).

▼

FREE INFORMATION COUPON

Electricity on the Farm, 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying.

....

....

My name is .....

Address .....

.....

I get electricity from .....

..... 1-35

question of using electric energy for heating out-of-door stock tanks becomes a live issue with thousands of farmers. There is no encouragement that can be offered the practice from a practical standpoint. For this operation wood, coal or oil would prove more economical.

A good method of watering stock out-of-doors during freezing weather is to use a small tank and pump only the amount of water the stock will drink at one time. Water freshly drawn from the well is usually about 50° F., or approximately 18° warmer than freezing. This is a desirable temperature for watering stock and is the method generally used where hand pumping is practiced. The electric motor makes the method all the more practical.

How Ranges Rank with Men

(*Continued from page* 13)

wife got up early, got the dinner, put it in the oven of the range, and set the timer to start it baking in the middle of the morning. Then she herself put on a pair of overalls and drove one of the wagons.

She hurried in ahead of the hungry crew at noon.

"And when we got there," says the man appreciatively, "there was a good hot dinner going on the table. You bet I was proud of that."

Most men do seem to be proud of having up to date, convenient equipment in their kichens for their wives.

I shall always remember as a vivid tribute to our times the words a man said to me almost ten years ago when ranges were newer and fewer than they are today. If I have told you this before, please don't stop me, for I do want to tell it again. I was just leaving a pleasant farm home where I had been spending the day. Both the man and his wife had followed me out to the car.

"Now that we have electricity for lighting, for cooking, and for heating water, he said, "there's a big part of the year when a man can't find a match around the place to light his pipe."

His wife only smiled.

"I'll trust you to look out for your own matches."

Then he put an arm across her shoulders and with a little wink at me he said,

"She says I'm never going to have a second wife. Things are getting so easy for women nowadays, she's going to live forever."

CLASSIFIED ADVERTISING

BROODERS—The unexcelled "Lyon Improved Electric." Other practical well proven types. ALARMS—Burglar, Fire, Temperature, Power-Off, etc. HEATING EQUIPMENT—for incubators, home made brooders. Water heaters. FLY and INSECT KILLERS—Send for complete electrical catalog and brooding data. LYON ELECTRIC CO., San Diego, Calif. (Pioneers of Electric Brooding).

The PARAGON POULTRY TIME SWITCH is scientifically designed and approved by state universities. It provides automatic control both morning and night and DIMS THE LIGHT AT NIGHT to allow the hens to return to roost. Low price and UNCONDITIONALLY GUARANTEED. WRITE for full information today. PARAGON ELECTRIC COMPANY, Van Buren and Dearborn Sts., Chicago, Ill.

GET BETTER PRICES FOR YOUR VEGETABLES—Prepare your produce for market with Felins Electric Bunch Tyer; Electric Bunch Vegetable Washer; Electric Root Washer. Thousands in use. Fully guaranteed. WRITE TODAY FOR FULL INFORMATION. FELINS, 2950 N. 14th St., Milwaukee, Wis.

What's New

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Electric Workshop

Many farmers employ their time to advantage during seasons, when outdoor work is slack, in building various equipment for use about the farm. Feeders and nests for the poultry house, a new piece of furniture for the residence and the repair of various machinery, all can be done on the farm when tools and time are available for doing the work.

A new product —an electric workshop — just announced by a large manufacturer of electric equipment has been designed primarily for the home workshop to do many operations in wood and the softer metals such as brass, aluminum and sheet iron. This combination machine complete may be packed in a box about a foot square and 38 inches long and when ready for use occupies a floor space 18 inches by 38 inches. According to the manufacturer this workshop will: Saw wood, cross-cut or rip, up to 1¾ inches thick, at any desired angle or bevel; turn wood with a limit of 9 inches diameter for face-plate work; take lengths of 30 inches between centers; readily turn brass and aluminum; sand flat surfaces and contours; scroll work on metals including sheet iron; scroll work on wood up to 2 inches thick; drill both wood and metal; make mortises and tenons; drill accurately-placed dowel holes; cut rabbets and grooves; grind and buff.

A Simple Matter

An efficiency expert was sent out in the Colorado mountains to advise the miners. One old miner, driving the expert through the snow and cold, spread a buffalo laprobe over the knees of both of them as they set side by side.

"You ought to turn the hair on the inside," said the expert; "don't you know it's a great deal warmer to have the hair next to your body?"

The old miner obeyed, and then sat there chuckling.

"What are you laughing about? Are you laughing at me?" exclaimed the expert, with an air of dignity.

"No," replied the miner, finding it difficult to restrain himself. "I was just thinking about the buffalo. What a fool he was all his life long not to know a simple thing like that."

COVER TITLE CONTEST

NOVEMBER COVER

Awards for January

First Prize — $20

"Turkey stuffed, electric timer set,
Done just right, no fuss, no fret."

DALE SHELT, Delta, Ohio.

Nine $2.00 Cash Prizes

"All stuffed and ready; oh, boy! what fun,
Mother turns button; forgotten 'till done."
MRS. ANNA R. LANG, Box 146, Danville, Vt.

"A turkey cooked the electrical way
Is cause for 'Thanksgiving' any day."
E. J. BENNETT, R.F.D. 1, Grove City, Ohio.

"No more tiresome watching! What a pleasant change!
Since mother bakes Thanksgiving dinner on her electric range."
MRS. HARRY A. CLOGSTON, R.F.D. 1, Box 27B, East Thetford, Vt.

"In the electric stove, 'twill be done to a turn
And you won't have to worry, for fear it will burn."
MAUDE CLIFFORD, R.F.D. 1, Watertown, Conn.

"Mother's stuffing the turkey—lovely sight!
Electrically-timed, oven will cook it right."
JANIE MAHAN, Danville, Va.

"Your Thanksgiving feast will be a winner
If in the electric stove you cook your dinner."
ETHEL H. BURGESS, R.F.D. 1, Wareham, Mass.

"With roaring fires and many a step our grandmas made Thanksgiving;
Electric wires, all timed and set, now add new joy to living."
MISS HATTIE A. ISHAM, R.F.D. 2, Springfield, Mass.

"An old fashioned cook on Thanksgiving Day
Cooking an old fashioned bird in a modern way."
MRS. C. G. PAGE, R.F.D. 3, Marshall, Mo.

"Anticipating how 'good' the turkey will be
When roasted in an oven heated with electricity."
MRS. GEO. W. GROGGER, R.F.D. 2, Hickman Mills, Mo.

THE RULES ARE SIMPLE!

Why Not Participate in This Month's Contest?

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover of this magazine.

The first prize will be $20 cash, and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles should be brief — the shorter the better — and short slogans will be given preference over rhymes.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before February 1st.

Winning names and titles will be announced in the March issue.

Send your title on the coupon or make out a similar form on a plain sheet of paper or government postcard.

My title for the January Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

.....

(a) Fill in brand name of any of the following ELECTRICALLY operated appliances you now have.

Range	Clothes Washer	Radio .....
Refrigerator	Vacuum Cleaner	Brooder .....
Water Pump	Milking Machine	Tool Grinder .....

My name is..... R.F.D.....

Post Office..... County..... State..... 1-35

Brood those Chicks ELECTRICALLY!

•

Proper Heat ASSURED During Important Early Weeks

•

THE EARLY WEEKS are the important weeks in chick raising . . . the weeks that largely determine profits. Brood your chicks the ELECTRIC WAY . . . it offers advantages that do not exist with any other method.

The fire hazard is reduced to a minimum.

Positive thermostatic control keeps the temperature RIGHT. No overheating, no underheating.

The brooder can be readily elevated for inspection or cleaning under the hover.

The heat is thrown over an adequate but confined area.

Adequate ventilation for maintaining a dry litter beneath the hover is provided.

The time and work required to attend an electric brooder is far less than with any other type. Electric heat is CLEAN, SAFE and CERTAIN.

•

For Further Information — See

Your Electrical Dealer—

or Farm Service Bureau of

West Penn Power Company

201—m

ELECTRICITY ON THE FARM
24 West 40th Street
New York, N. Y.

Return Postage Guaranteed

PENNA. STATE COLLEGE,
STATE COLLEGE,
PA.
201

Sec. 562 P. L. & R.
U. S. POSTAGE
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New York, N. Y.
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